

# Simulation-Based Lunar Telerobotics Design, Acquisition and Training Platform for Virtual Exploration, Phase I

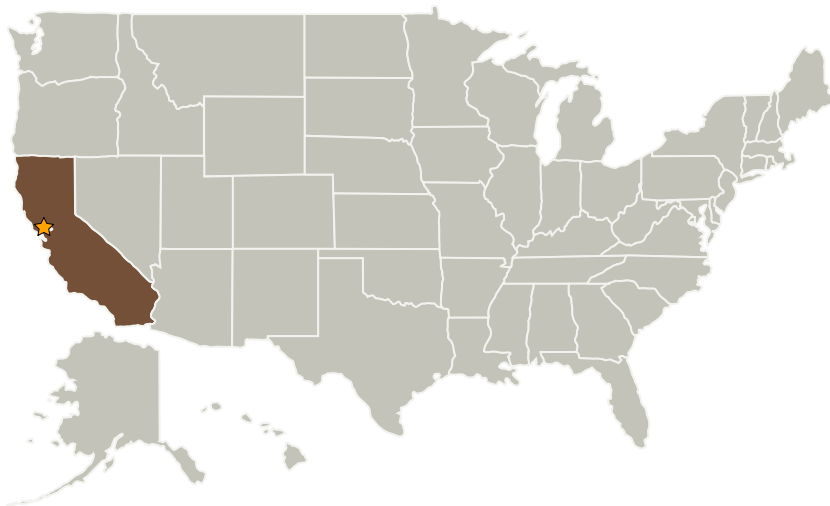
Completed Technology Project (2005 - 2005)



## Project Introduction

This Phase I proposal will develop a virtual test fixture performing a high caliber 3D dynamic reproduction of an prototype lunar bucket wheel excavator prototype developed at the Colorado School of Mines. This virtual test fixture will support an experimental telerobotics interface through a visual virtual environment built by DigitalSpace and a haptic force feedback interface integrated by DigitalSpace from Stanford University's Spring system. From NASA's Ames Research Center we will employ the Brahms agent technology and SimStation Procedures Module CAD representation and interaction also developed at ARC in collaboration with NASA JSC and Raytheon. Testing of this telerobotics interface will refine its accuracy vis a vis the physical excavator and its behavior and provide a platform able to evolve to higher Technology Readiness Levels (TRLs) to support NASA's new exploration vision of a human return to the moon within twenty years.

## Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
DigitalSpace Corporation	Supporting Organization	Industry	Santa Cruz, California



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## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Center / Facility:

Ames Research Center (ARC)

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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## Primary U.S. Work Locations

California

## Project Management

### Program Director:

Jason L Kessler

### Program Manager:

Carlos Torrez

### Principal Investigator:

Bruce F Damer

## Technology Areas

### Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  - └ TX11.1 Software Development, Engineering, and Integrity
    - └ TX11.1.2 Verification and Validation of Software systems